

IN THE CLAIMS:

Please amend claims 3-5, 7, 8, 10, 11, and 14-21 as follows.

1. (Previously Presented) A method of forming a lattice-tuning semiconductor substrate, comprising:

(a) defining parallel strips (12) of a Si surface by spaced parallel isolating means (2; 11) provided along opposite edges of the strips;

(b) selectively growing a first SiGe layer (13) on the strips (12) and not on the isolating means (2; 11) between the strips, such that first dislocations (14) extend preferentially across the first SiGe layer (13) between the isolating means (2; 11) to relieve the strain in the first SiGe layer (13) in directions transverse to the isolating means (2; 11); and

(c) growing a second SiGe layer (13a) on top of the first SiGe layer (13) to overgrow the isolating means (2; 11) such that second dislocations (15) form preferentially within the second SiGe layer (13a) above the isolating means (2; 11) to relieve the strain in the second SiGe layer (13a) in directions transverse to the first dislocations (14).

2. (Original) A method according to claim 1, wherein the first SiGe layer (13) has a Ge composition ratio that is substantially constant within the layer (13).

3. (Currently Amended) A method according to claim 1 or 2, wherein the second SiGe layer (13a) has a Ge composition ratio that is substantially constant within the layer (13a).

4. (Currently Amended) A method according to claim 1, ~~2 or 3~~, wherein at least one of the SiGe layers (13, 13a) has a Ge composition ratio that increases within the layer from a first level to a second level greater than the first level.

5. (Currently Amended) A method according to ~~any preceding~~ claim 1, wherein at least the first SiGe layer (13) is annealed at an elevated temperature in order to substantially fully relieve the strain in the layer (13).

6. (Original) A method according to claim 5, wherein the growth of the first and second SiGe layers (13, 13a) is carried out at a temperature in the range from room temperature to 1200°C, and preferably in the range from 350 to 900°C, and the annealing of at least the first SiGe layer (13) is carried out at an elevated temperature in the range from room temperature to 1500°C, and preferably in the range from 500 to 1200°C.

7. (Currently Amended) A method according to ~~any one of claims 1 to 6~~ claim 1, wherein the first and second SiGe layers (13, 13a) are formed by a single continuous growth process.

8. (Currently Amended) A method according to ~~any one of claims 1 to 6~~ claim 1, wherein intermediate processing is conducted between the growth of the first SiGe layer (13) and the growth of the second SiGe layer (13a).

9. (Original) A method according to claim 8, wherein the intermediate processing incorporates a step of annealing the first SiGe layer (13) at an elevated temperature in order to substantially fully relieve the strain in the first SiGe layer (13).

10. (Currently Amended) A method according to claim 8 or 9, wherein the intermediate processing step incorporates a chemo-mechanical polishing step.

11. (Currently Amended) A method according to ~~any preceding claim 1~~, wherein the first SiGe layer (13) is grown by a selective epitaxial growth process.

12. (Original) A method according to claim 11, wherein the epitaxial growth process is chemical vapour deposition (CVD).

13. (Original) A method according to claim 11, wherein the epitaxial growth process is molecular beam epitaxy (MBE).

14. (Currently Amended) A method according to ~~any preceding claim 1~~, wherein the strips of Si oxide have a thickness in the range of 10 nm to 1000 nm, and preferably in the range from 400 nm to 700 nm.

15. (Currently Amended) A method according to ~~any preceding claim 1~~, wherein the strips (12) of Si oxide have a width in the range from 100 nm to 10 μm , and preferably about 1 μm .

16. (Currently Amended) A method according to ~~any preceding claim 1~~, wherein the strips (12) of Si oxide are spaced apart by a distance in the range from 100 nm to 100 μm , and preferably in the range from 5 μm to 20 μm .

17. (Currently Amended) A method according to ~~any preceding claim 1~~, further comprising the step of growing on top of the first and second SiGe layers (13, 13a) a strained Si layer within which one or more semiconductor devices are formed.

18. (Currently Amended) A method according to ~~any one of claims 1 to 17~~ claim 1, wherein the isolating means comprises spaced parallel walls (2; 11) of Si oxide on the Si surface.

19. (Currently Amended) A method according to ~~one of claims 1 to 17~~ claim 1, wherein the isolating means comprises spaced parallel trenches in the Si surface.
20. (Currently Amended) A method according to ~~one of claims 1 to 17~~ claim 1, wherein the isolating means comprises spaced parallel walls of Si nitride on the Si surface.
21. (Currently Amended) A lattice-tuning semiconductor substrate formed by a method according to ~~any preceding~~ claim 1.